



Organized by:
Office of Nuclear Regulatory Research
United States Nuclear Regulatory Commission
Washington, DC 20555



Nuclear Safety Research Conference 2003

SESSION SCHEDULE & ROOM LOCATIONS			
MONDAY	8:30 am	Plenary Session: NRC Chairman's Keynote Speech	Grand Ballrooms A, B, C
	10:00 am	Panel Discussion	Grand Ballrooms A, B, C
	12:00 noon	Lunch – On Your Own	See Hotel for Restaurant Specials
	1:30 pm	Session 1 (Plenary)	Grand Ballrooms A, B, C
TUESDAY	8:30 am	Plenary Session: NRC Commissioner, Speaker	Grand Ballrooms A, B, C
	9:30 am	Session 2	Salon A
		Session 3	Salon B
	11:00 am	Session 4	Salon C
	12:30 pm	Lunch – On Your Own	See Hotel for Restaurant Specials
WEDNESDAY	2:00 pm	Session 5	Salon C
		Session 6	Salon A
	8:30 am	Plenary Session: NRC Commissioner, Speaker	Grand Ballrooms A, B, C
	9:30 am	Panel Discussion	Grand Ballrooms A, B, C
	10:45 am	Panel Discussion	Grand Ballrooms A, B, C
	12:30 pm	Lunch – On Your Own	See Hotel for Restaurant Specials
	2:00 pm	Session 7	Grand Ballrooms A, B, C
	4:20 pm	Closing Remarks and Audience Feedback	Grand Ballrooms A, B, C

Susan Monteleone, BNL, Conference Coordinator

8:30

Plenary Session (Grand Ballroom)

Opening Remarks and Welcome

Ashok C. Thadani, Director, Office of Nuclear Regulatory Research

8:45

Keynote Speaker:

Nils J. Diaz, NRC Chairman

9:45

Break

10:00

Panel Discussion: *Risk-Informed Regulation/Realistic Conservatism*

Panel Members: Mario Bonaca (ACRS)

Lothar Hahn (GRS)

Mike Knapik (Inside NRC)

Tony Pietrangelo (NEI)

Loren Plisco (NRC)

Scott Newberry (NRC), Panel Moderator

12:00

Lunch

RISK-INFORMED REGULATION/REALISTIC CONSERVATISM

Chaired by: H. Hamzehee, M. Reinhart (NRC)

Objective: To discuss recent advances in risk analysis methods and their application to risk-informed regulation.

1:30 Addressing the Issue of PRA Quality

M. Drouin, G. Parry (NRC)

2:00 Experience with PRA in the Generic Issues Program

H. VanderMolen (NRC)

2:30 A Pilot Application of a Risk-Informed Approach for Certification of Dry Cask Storage of Spent Fuel

K. Gruss, M. Waters, C. Lui (NRC)

3:00 Break

3:15 Fire Risk Research Program: Advances Supporting Risk-Informed Regulation, J. Hyslop (NRC)

3:45 10CRF50.46, J. Lane, A. Buslik, H. Hamzehee (NRC)

4:15 LOCA Frequencies and Break Size Redefinition using Expert Elicitation, R. Tregoning (NRC)

POSTER SESSIONS

A Risk-Informed Re-Evaluation of the Technical Basis for the Pressurized Thermal Shock Rule (10CFR50.61) and Associated Screening Criteria, M. Kirk, et al. (NRC)

Full-Scale Nuclear Power Plant Compartment Fire Experiments for Fire Model Validation, A. Hamins, et al. (NIST)

The Effects of Aliovalent Elements on Nodular Oxidation of Zr-Base Alloys, H. Chung (ANL)

LOCA Testing at Halden, E. Kolstad, V. Lestinen, W. Wiesenack (OECD Halden Reactor Project)

Scaling Methods for RIA Data, R. Meyer (NRC)

Recent Results from LOCA Study at JAERI, F. Nagase, T. Fuketa (JAERI)

Key Input Variables for RIA Simulations: A Study Based on FRAPCON and SCANAIR Codes, F. Barrio, L. Herranz (CIEMAT-Spain)

TRACE, C. Murray, J. Staudenmeir (NRC)

Debris Impact on PWR Sump Performance
T. Y. Chang (NRC)

Package Performance Study, A. Murphy (NRC)

Emerging Technology, R. Shaffer, C. Antonescu, S. Arndt, and T. Govan (NRC)

Digital Feedwater System Reliability Assessment
J. Calvert (NRC)

8:30

Plenary Session (Grand Ballroom)

Guest Speaker: Jeffrey S. Merrifield, Commissioner, NRC

9:15

Break

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DECOMMISSIONING

Chaired by: W. Ott (NRC)

Objective: To discuss RES work underway that supports license decision-making in decommissioning by using more realistic tools, and rule-making on 1) controlling the disposition of solid materials, and 2) reactor entombment.

- 9:30 NUREG-1640: Radiological Assessments for Clearance of Equipment and Materials from Nuclear Facilities
R. Meck (NRC), R. Anigstein (SC&A)
- 9:50 Survey Guidance
C. Gogolak (EML-DHS)
- 10:10 Enhancements to the RESRAD Family of Dose Modeling Codes, S. Domoter (DOE)
- 10:30 Evaluation of Entombment as a Decommissioning Option for Nuclear Power Reactors, K. Snyder (NIST), J. Philip (NRC)

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ADVANCED REACTORS

Chaired by: S. Rubin, J. Lyons (NRC)

Objective: To present the latest research on advanced reactors, focusing on new and evolving safety or regulatory issues, and the infrastructure needed to form a sound technical basis for regulatory decisions.

- 9:30 NRC's Advanced Reactor Research Program, J. Flack (NRC)
- 10:00 Advanced Reactor Research: DOE Sponsored
J. Lake, R. Schultz (INEEL)
- 10:30 Analytical Codes and Data Needs for Advanced Reactors
S. Bajorek (NRC)
- 11:00 Regulatory Process/Structure for Future Nuclear Power Plant Licensing, M. Drouin, T. King (NRC), J. Lehner, W. Pratt, V. Mubayi (BNL)
- 11:30 Generation IV Concepts and Technology Challenges
J. Remer (DOE)

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BEHAVIOR OF SPENT FUEL IN DRY CASKS

Chaired by: R. Meyer, C. Interrante (NRC)

Objective: To describe recent research results on fuel behavior under conditions expected in dry casks.

- 11:00 Introductory Remarks on Spent Fuel Research Needs
C. Interrante (NRC)
- 11:15 Cladding Behavior During Dry Cask Handling and Storage
H. Tsai, M. Billone (ANL)
- 11:45 Mechanical Properties of Irradiated Zircaloy-4 for Dry Cask Storage Conditions and Accidents
R. Daum, S. Majumdar, M. Billone (ANL)

12:30

Lunch

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HIGH BURNUP FUEL BEHAVIOR DURING REACTOR ACCIDENTS

Chaired by: R. Meyer (NRC), R. Yang (EPRI)

Objective: To describe recent research results on high-burnup fuel and on cladding alloys that have been introduced to achieve high burnups.

- 2:00 LOCA Results for Advanced-Alloy and High-Burnup Zircaloy Cladding, Y. Yan, T. Burseva, M. Billone (ANL)
- 2:30 LOCA Behavior of E110 Alloy, L. Yegorova, K. Lioutov (NSI Kurchatov Institute), V. Smirnov, A. Goryachev, V. Chesanov (RIAR)
- 3:00 Recent Data on M5™ Alloy Under LOCA Conditions
J. Mardon (Framatome), N. Waeckel (EDF-SEPTEN)
- 3:30 Break
- 3:45 Effects of Pellet Expansion and Cladding Hydrides on PCMI Failure of High Burnup LWR Fuel During Reactivity Transients, T. Fuketa, et al. (JAERI)
- 4:15 CABRI CIP0-1 Preliminary Test Results, J-C Melis, et al. (IRSN)

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OPERATING EXPERIENCE EVALUATION

Chaired by: J. Ibarra (NRC)

Objective: To describe several studies wherein RES had a critical role in assessing operating experience and disseminating those findings to staff and the industry. Also, to present RES's major on-going involvement in reassessing NRC's current operating experience programs prompted by the head degradation incident at the Davis Besse plant.

- 2:00 Electrical Grid Study, W. Roughley (NRC)
- 2:25 Overview of Research Findings on the Mitigating Systems Performance Index (MSPI), D. Dube (NRC)
- 2:50 Boron Dilution Tests/PKL, R. Zipper (GRS)
- 3:15 Break
- 3:30 Davis Besse Lessons Learned / Safety Culture
J. Persensky (NRC)
- 3:55 Operating Experience Task Force, J. Ibarra (NRC)

8:30 **Plenary Session (Grand Ballroom)**
Guest Speaker: Edward McGaffigan, Jr., Commissioner, NRC

9:15 Break

9:30 **Panel Discussion: Knowledge Management**
Panel Members: Earl Carnes (DOE)
Jeanne Holm (NASA)
Jack Haugh (EPRI)

Ramin Assa (NRC), Panel Moderator

10:30 Break

10:45 **Panel Discussion: Materials Degradation - Present Status and Future Directions**

Panel Members: Paul Gunter (NIRS)
Alex Marion (NEI)
Brian Sheron (NRC)
Jack Strosnider (NRC)
Christer Viktorsson (SKI)

Michael Mayfield (NRC), Panel Moderator

12:30 Lunch

7 MATERIALS DEGRADATION - PRESENT STATUS AND FUTURE DIRECTIONS

Chaired by W. Cullen (NRC)

Objective: To describe the results of characterizing degradation mechanisms in reactor coolant pressure boundary materials, methodologies for their mitigation/repair, and actions planned for evaluating and managing such degradation.

2:00 NDE for Reactor Pressure Vessel Head Replacements
S. Doctor (PNNL)

2:25 Predicting the Occurrence of Corrosion Failures in
Nuclear Power Plant Components
R. Staehle (U. Minnesota), J. Gorman
(Dominion Engineering)

2:50 Anticipating Materials Problems: Field Experience and
Laboratory Studies, W. Shack, O. Chopra (ANL)

3:15 Break

3:30 Strategic Planning for RPV Head Nozzle PWSCC
S. Hunt (Dominion Engineering)

3:55 Acknowledging the Past to Prepare for the Future
D. Steininger (EPRI)

4:20 **Closing Remarks and Audience Feedback**